

# **COLLEGEWIDE COURSE OUTLINE OF RECORD**

## **BIOL 101, INTRODUCTORY BIOLOGY**

**COURSE TITLE:** Introductory Biology

**COURSE NUMBER:** BIOL 101

**PREREQUISITES:** Demonstrated competency through appropriate assessment or earning a grade of “C” or better in ENGL 093 Introduction to College Writing and ENGL 083 Reading Strategies for College or ENGL 095 Integrated Reading and Writing, and MATH 023 Essentials of Algebra I or MATH 080 Mathematics Principles with Algebra or FOUN 071 Tech Foundations.

**SCHOOL:** Arts, Sciences & Education

**PROGRAM:** Life Sciences

**CREDIT HOURS:** 3

**CONTACT HOURS:** Lecture: 2      Lab: 2

**DATE OF LAST REVISION:** Spring, 2017

**EFFECTIVE DATE OF THIS REVISION:** Fall, 2018

**CATALOG DESCRIPTION:** Introduces the basic concepts of life. Includes discussion of cellular and organismal biology, genetics, evolution, ecology, and interaction among all living organisms. Addresses applications of biology in a global community.

**MAJOR COURSE LEARNING OBJECTIVES:** Upon successful completion of this course the student will be expected to:

1. Apply the scientific method to problems encountered in everyday life.
2. Provide examples of the historic development of current scientific thought.
3. Demonstrate basic skills of metric measuring, data collection, data interpretation, and microscope use.
4. Interpret simulations of biological systems and relate them to concrete applications.
5. Describe basic concepts in the field of chemistry and biochemistry.
6. Describe plant structures and functions including reproductive biology, development, and regulation of systems.
7. Identify the internal and external structures of both the prokaryotic and eukaryotic cells and define the functions of each.
8. Recognize energy pathways such as photosynthesis, respiration, and overall cellular metabolism.
9. Describe the basic processes of mitosis and meiosis and relate them to the life cycle of organisms.
10. Summarize the mechanisms of inheritance and the processes by which protein and DNA are synthesized.
11. Describe the major principles of genetics and biotechnology.
12. Understand the mechanisms of natural selection and their impact on evolution.
13. Identify major ecological concepts such as communities, energy flow and nutrient cycling, and renewable and non-renewable resources.
14. Describe the general properties and characteristics of the biological kingdoms.

15. Survey the structure and functions of physiological systems of the animal kingdom.
16. Apply the scientific method and the knowledge gained from the course to global societal concerns.

COURSE CONTENT: Topical areas of study include –

Scientific method	Basic inorganic and organic chemistry principles
Animal biology	Cell cycle and the mechanisms of molecular genetics
Plant biology	Natural selection and evolution
Biotechnology	Cell structure and function
Genetics	General process of energy transformation: enzyme function,
Ecology	photosynthesis, aerobic and anaerobic respiration
Phylogeny	World issues and their effects on the field of biology

SUGGESTED LAB CONTENTS:

Microscopy	Metric system
Osmosis	Chemistry
pH/Model building	Cell structure
Genetics	Environmental
Dicotomous Key	Simulation of protein synthesis
Enzyme activity	Comparative anatomy
Plant anatomy	

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The Ivy Tech Library is available to students on- and off-campus, offering full text journals and books and other resources essential for course assignments. Go to <http://www.ivytech.edu/library/> and choose the link for your campus.

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